CLAIMS

1. Method for simulating communication networks by means of an object based architecture (12, 13), in which each object (13) represents a device of the network, the simulated network being capable of corresponding to a plurality of different systems, characterised in that it comprises the step of subdividing the physical devices of the network, for simulation purposes, into:

- a first set of devices (NSC, HOST), completely independent of the system that regulates the operation of the network, the operation of the devices of said first set thus being independent of said system,
- a second set of devices (MS/UE, NodeB, RNC, BTS, BSC) which depend on the system under consideration, the operation of the devices included in said second set thus being specific for the system under consideration, and
- a third set of devices (MSC, SGSN, GGSN) for the inter-work between said first set and said second set, the devices of said third set being able to interact with said devices independent of the system under consideration and with said devices which depend on the system under consideration,

said sets of devices defining a simulation architecture which is capable of allowing the simulation of a network operating according to said plurality of systems.

2. Method as claimed in claim 1, characterised in that it comprises the step of including in said second set mobile terminal devices (MS/UE), each having an architecture that is characteristic of the individual system.

3. Method as claimed in claim 1, characterised in that it comprises the step of including in said first set fixed network devices (NSC, HOST).

4. Method as claimed in claim 1, characterised in that it comprises the step of including in said third set physical devices of the Core Network (MSC, SGSN, GGSN) of a mobile communication network.

5. Method as claimed in claim 1, characterised in that it comprises the step of including in said second set physical devices of the access network (NodeB, RNC, BTS, BSC) relating to said communication network.

6. Method as claimed in claim 2, characterised in that said mobile terminal devices (MS/UE) are modelled as being constituted by a part that is common to all the systems of said plurality and by a part that is specific of a respective system under consideration.

7. Method as claimed in claim 2, characterised in that it comprises the step of modelling said mobile terminal devices (MS/UE) as a grouping of modules simulating the behaviour of different real protocols by means of:

- a set of application modules, common to all the systems of said plurality,

- access modules, specific of the system under consideration, and

- modules which are common to all the systems of said plurality but with partly different operation according to the related system.

8. Method as claimed in claim 7, characterised in that it comprises the steps of:

- including into said third set physical devices of the so-called Core Network (MSC, SGSN, GGSN) of a mobile communication network, and

- configuring the set of said application modules and of said core network modules in a mobile unit (MU).

9. Method as claimed in claim 8, characterised in that it comprises the step of configuring said mobile terminal devices (MS/UE) as constituted by the composition of said mobile unit (MU) and of specific access modules of the system under consideration.

10. Method as claimed in claim 7, characterised in that it comprises at least one of the steps included in the group constituted by:

- making the application modules of said mobile terminal devices (MS/UE) communicate with the modules present in the devices of said first set (NSC, HOST),

- making the modules present in the devices of said third set (MSC, SGSN, GGSN) communicate with the homologous modules present in said mobile terminal devices (MS/UE), and

- making radio access modules of said mobile terminal devices (MS/UE) communicate with the modules present in the devices of said second set (NodeB, RNC, BTS, BSC).

11. Simulator for simulating communication networks by means of an object based architecture (12, 13), in which each object (13) represents a device of the network, the simulated network being capable of corresponding to a plurality of different systems, the simulator (10) being characterised in that it comprises:

- a first set of devices (NSC, HOST), completely independent of the system that regulates the operation of the network, the operation of the devices of said first set thus being independent of said system,

- a second set of devices (MS/UE, NodeB, RNC, BTS, BSC) which depend on the system under consideration, the operation of the devices included in said second set thus being specific for the system under consideration, and

- a third set of devices (MSC, SGSN, GGSN) for the inter-work between said first set and said second set, the devices of said third set being able to interact with said devices independent of the system under consideration and with said devices which depend on the system under consideration,

said sets of devices defining a simulator architecture which is capable of allowing the simulation of a network operating according to said plurality of systems.

12. Simulator as claimed in claim 11, characterised in that said second set it comprises mobile terminal devices (MS/UE), each having a characteristic architecture of the individual system.

13. Simulator as claimed in claim 11, characterised in that said first set comprises fixed network devices (NSC, HOST).

14. Simulator as claimed in claim 11, characterised in that said third set comprises physical devices of the Core Network ((MSC, SGSN, GGSN) of a mobile communication network.

15. Simulator as claimed in claim 11, characterised in that said second set comprises physical devices of the access network (NodeB, RNC, BTS, BSC) relating to said communication network.

16. Simulator as claimed in claim 12, characterised in that said mobile terminal devices (MS/UE) are constituted by a part that is common to all the systems of said plurality and by a part that is specific of a respective system under consideration.

17. Simulator as claimed in claim 12, characterised in that said mobile terminal devices (MS/UE) are configured as a grouping of modules simulating the behaviour of different real protocols comprising:

- a set of application modules, common to all the systems of said plurality,

- access modules, specific of the system under consideration, and

- modules which are common to all the systems of said plurality but with partly different operation according to the related system.

18. Simulator as claimed in claim 17, characterised in that:

- said third set comprises physical devices of the so-called Core Network ((MSC, SGSN, GGSN) of a mobile communication network, and

- the set of said application modules and of said core network modules is configured as a mobile unit.

19. Simulator as claimed in claim 18, characterised in that said mobile terminal devices (MS/UE) are constituted by the composition of said mobile unit (MU) and of specific access modules of the system under consideration.

20. Simulator as claimed in claim 17, characterised in that it is configured to allow communications according to at least one of the operations included in the group constituted by:

- making the application modules of said mobile terminal devices (MS/UE) communicate with the modules present in the devices of said first set (NSC, HOST),

- making the modules present in the devices of said third set (MSC, SGSN, GGSN) communicate with the homologous modules present in said mobile terminal devices (MS/UE), and

- making radio access modules of said mobile terminal devices (MS/UE) communicate with the modules present in the devices of said second set (NodeB, RNC, BTS, BSC).

21. Communication network resulting from the application of the method as claimed in any of the claims 1 through 10.

22. Computer program product able to be loaded in the memory of at least an electronic computer and comprising portions of software code to implement the method as claimed in any of the claims 1 through 10.